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IN THE UNITED STATES DISTRICT COURT
 FOR THE CENTRAL DISTRICT OF CALIFORNIA

RENO MAY, an individual, et al.,
 Plaintiffs,
 v.
**ROBERT BONTA, in his official
 capacity as Attorney General of the
 State of California, and Does 1-10,**
 Defendants.

**MARCO ANTONIO CARRALERO, an
 individual, et al.,**
 Plaintiffs,
 v.
**ROBERT BONTA, in his official
 capacity as Attorney General of
 California,**
 Defendant.

Case Nos. 8:23-cv-01696 CJC (ADSx)
 8:23-cv-01798 CJC (ADSx)

**DECLARATION OF DR. JEANNE
 KISACKY IN SUPPORT OF
 DEFENDANT'S OPPOSITION TO
 PLAINTIFFS' MOTIONS FOR
 PRELIMINARY INJUNCTION**

Date: December 20, 2023
 Time: 1:30 p.m.
 Courtroom: 9B
 Judge: Hon. Cormac J. Carney

DECLARATION OF DR. JEANNE KISACKY

I, Dr. Jeanne Kisacky, declare under penalty of perjury that the following is true and correct:

1. I have been retained by the Office of the Attorney General of the California Department of Justice to provide expert opinions and testimony regarding the history of medical facilities and hospitals in America. Specifically, I have been asked to opine regarding the similarities and differences between hospitals as they existed in the Founding era (in and around the year 1791) and the Reconstruction era (in and around the year 1868) and hospitals as they exist in the modern era.

2. This declaration is based on my own personal knowledge and experience, and if I am called to testify as a witness, I could and would testify competently to the truth of the matters discussed in this declaration.

BACKGROUND AND QUALIFICATIONS

3. I am an Historian and Independent Scholar with a background in architectural practice. My chosen professional name is Jeanne Susan Kisacky. In 2017, my book Rise of the Modern Hospital: An Architectural History of Health and Healing, won the Fred B. Kniffen Book Award for best authored publication from the International Society of Landscape, Place, and Material Culture. In 2009, I received an individual award from the National Institutes of Health (Grant G13LM 009479) through the National Library of Medicine's Grant for Scholarly Works in Biomedicine and Health program, which supported the preparation of that book. From 2003 to 2012, I taught variously as Lecturer, Adjunct Assistant Professor, and Assistant Professor at Cornell University, Syracuse University, and Binghamton University. Before undertaking my historical research, I trained in architectural design and between 1987 and 1993, I worked as an architectural intern at the Children's Hospital in St. Louis, Kohn Pederson Fox Architects in New York City, and Ford, Farewell, Mills, and Gatsch in Princeton, New Jersey. My

1 educational background includes a Ph.D. and M.A. in History from Cornell
 2 University, where my Thesis was on the architectural transformation of American
 3 hospital design from the eighteenth century to the early twentieth century with
 4 special attention to social, medical and cultural influences. Prior to that, I received
 5 an M. Arch. from Princeton University, and a B.A. from Washington University in
 6 St. Louis. A true and correct copy of my current curriculum vitae is attached as
 7 **Exhibit 1** to this declaration.

8 **RETENTION AND COMPENSATION**

9 4. I am being compensated for services performed in the above-entitled
 10 case at an hourly rate of \$225. My compensation is not contingent on the results of
 11 my analysis or the substance of any testimony.

12 **BASIS FOR OPINIONS AND MATERIALS CONSIDERED**

13 5. The opinions that I provide in this declaration are based on my
 14 education, expertise, and research in the field of the history of American hospitals,
 15 through the lens of architectural design. My opinions are informed by the
 16 knowledge that I have gained over the course of more than 25 years of archival
 17 research, including my analysis of numerous primary and secondary sources.

18 **OPINIONS**

19 **I. Hospitals As They Exist In The Modern Era**

20 6. Hospitals as they exist in the United States in the modern era are the
 21 preferred location for receipt of pay-for-service, expert, technologically supported
 22 medical treatment for persons in medical need. They are understood to have
 23 specialized facilities designed to accommodate medical diagnosis, treatment, and
 24 care.¹ Based on the 2010 edition of the Guidelines for Design and Construction of

25 _____
 26 ¹ Examples of books detailing the history and details of hospital facilities design include,
 27 for example, Stephen Verderber, Innovations in Hospital Architecture, (New York, Routledge,
 28 2010); Richard L. Miller, Earl S. Swensson, J. Todd Robinson, Hospital and Healthcare Facility
 Design, 3rd ed. (New York/London, W.W. Norton & Company, 2012); Cor Wagenaar, Ed., The
 Architecture of Hospitals. (Belgium, NAI Publishers, 2006).

Hospitals, examples of diagnostic facilities include examination rooms, imaging suites (such as x-ray, MRI, and CAT scanners), and clinical laboratories for specimen acquisition and analysis (such as hematology, pathology, and cytology). Examples of treatment facilities include surgical suites, outpatient departments, emergency units, and special units devoted to specific medical specialties (such as otolaryngology, oncology, pediatrics, and cardiology). Examples of care facilities include inpatient units, critical care units, isolation units, and palliative care units each of which accommodates patient rooms as well as nursing stations and service areas.² For best functioning, all these different units are interconnected by extensive circulation infrastructure for persons, items, and information (including corridors, elevators, pneumatic tube delivery systems, phone, intercom, and computer inter- and intra-net interconnections).³ Hospitals have specialized requirements for mechanical systems, including negative and positive air pressure rooms, high-voltage and explosion-proof electrical outlets, and plumbing systems that provide pure water, sterilizing systems, and centralized suction.⁴

7. Generally, when seeking medical treatment at a modern-era hospital in the United States, a patient moves throughout the different parts of the hospital—from admission through a series of diagnostic and treatment facilities (e.g. hematology, X-ray, MRI, CAT Scan, ultrasound, surgery, endoscopy, dialysis, physical therapy). Inpatients often move from one unit (and bed) to another as their conditions change from acute (critical care, observation unit, cardiac care unit, or

² The most current version of the guidelines was published in 2022, but the 2010 edition has been made publicly available: The Facility Guidelines Institute, with assistance from the U.S. Dept. of Health and Human Services, Guidelines for Design and Construction of Health Care Facilities, FGI, 2010, https://www.fgiguideines.org/wp-content/uploads/2022/03/2010_FGI_Guidelines.pdf.

³ An overview of current literature on hospital circulation zones provides an idea of the complexity and depth of research on this design feature. *See* S. Jiang. and S. Verderber, "On the Planning and Design of Hospital Circulation Zones: A Review of the Evidence-Based Literature." HERD: Health Environments Research & Design Journal 10:2 (January 2016), 124-146.

⁴ Guidelines for Design and Construction of Health Care Facilities, 2010, *op. cit.* 63-88, 373-393.

1 surgical recovery unit) to moderate-risk (general or intermediate care unit) to stable
 2 (rehabilitation unit or chronic care units).⁵

3 8. Hospital facilities in the modern era are subject to intensive
 4 regulations, guidelines, and minimum standards. The passage in 1946 of the
 5 Hospital Survey and Construction Act (Public Law 725, 79th Congress, commonly
 6 referred to as the Hill-Burton Act) resulted in the establishment of Federal standards
 7 for hospital design in 1947 by the Public Health Service.⁶ These have been
 8 regularly updated.⁷ State and local building codes are now also layered onto
 9 hospital facilities.⁸ These standards influence hospital layouts, hospital details, and
 10 selection of hospital construction materials. For example, in inpatient units, recent
 11 hospital design standards specify the size of patient rooms, recommend only one

12 ⁵ The promotion of Progressive Patient Care facility designs in 1959 and 1962 by the
 13 Public Health Service encouraged the movement of inpatients through a sequence of specially
 14 designed inpatient units (such as critical care, intermediate care, and minimal care) as they
 15 progressed on their recovery. See Elements of Progressive Patient Care, Division of Hospital and
 16 Medical Facilities, Public Health Service, U.S. Dept. of Health Education and Welfare, Public
 17 Health Service Publication #930-C-1, 1962. See also D. Kirk Hamilton, Jeanne Kisacky, and
 18 Frank Zilm, “Critical Care 1950 to 2022: Evolution of Medicine, Nursing, Technology, and
 Design,” Critical Care Clinics 39:3 (July 2023) 603-625 doi:10.1016/j.ccc.2023.01.002. On the
 patient’s journey through the hospital, see also R Gualandi, C Masella, D Viglione, D Tartaglino,
 “Exploring the hospital patient journey: What does the patient experience?” PLoS One. 14:12
 (Dec 5 2019), e0224899, doi: 10.1371/journal.pone.0224899 and Muriel R. Gillick, Old and Sick
 in America: The Journey through the Health Care System (Chapel Hill, NC: University of North
 Carolina Press, 2017).

19 ⁶ Federal Register 12:30 (Wednesday, February 12, 1947) “Appendix A.—General
 Standards of Construction and Equipment,” 985-1001.

20 ⁷ The Facility Guidelines Institute webpage “Earlier Editions of the Guidelines,” links to
 or lists many of the earlier editions of hospital design guidelines
 21 (<https://www.fgiguilines.org/guidelines/earlier-editions/>). Up to 1987, the guidelines were
 published by the Public Health Service under the Department of Health, Education and Welfare,
 22 see, for example, Federal Register 29:252 (Tuesday, December 29, 1964) Public Health Service:
 Rules and Regulations, 18447-18474; Minimum Requirements of Construction & Equipment for
 Hospital & Medical Facilities, United States, HEW Publication No. (HRA) 74-4000, U.S.
 23 Government Printing Office, Washington, D.C., 1974. From 1987 to 2006, the guidelines were
 published by the American Institute of Architects (AIA) with assistance from the U.S.
 24 Department of Health and Human Services, see, for example, Guidelines for Construction and
 Equipment of Hospital and Medical Facilities, AIA Committee on Architecture for Health with
 25 assistance from the U.S. Dept. of Health and Human Services, 1987. In 2010, the guidelines were
 published by the Facility Guidelines Institute with assistance from the U.S. Department of Health
 26 and Human Services.

27 ⁸ As just one relevant example, see Codes and Regulations, California Department of
 Health Care Access and Information, [https://hcai.ca.gov/construction-finance/codes-and-](https://hcai.ca.gov/construction-finance/codes-and-regulations/)
 28 [regulations/](https://hcai.ca.gov/construction-finance/codes-and-regulations/).

1 bed per room, specify the required number of airborne infection isolation rooms,
 2 outline the necessary details of protective environment rooms, and determine the
 3 number of visitor lounges.⁹ Extensive design features for physical safety (including
 4 handrails, non-slip floors, and call buttons and cords) and infection control
 5 (including positive and negative pressure ventilation, antibacterial material choices,
 6 and handwashing stations) protect an inherently at-risk population.¹⁰

7 9. Hospital practice in the modern era is also intensely regulated by
 8 multiple agencies and institutions which provide codes, standards, certification,
 9 licensing, and accreditation for hospitals and hospital practitioners.¹¹ The Medicare
 10 Conditions of Participation set the standards necessary for payments to be made to
 11 an institution.¹² In many states, including California, hospital patients have rights
 12 as to how they may be treated and by whom.¹³

13 10. The Hill-Burton Act also established the American expectation of
 14 proximate and equal access to a hospital for all communities and citizens in all
 15 locations. The Act supported the construction of more than 7,000 hospital facilities
 16

17
 18 ⁹ Guidelines for Design and Construction of Health Care Facilities, FGI, 2010, op. cit. 89-
 95.

19 ¹⁰ Guidelines for Design and Construction of Health Care Facilities, FGI, 2010, op. cit.
 43-44, 57-63.

20 ¹¹ The American College of Surgeons initiated minimum hospital standards and
 accreditation processes in 1917, with the process being taken over by the Joint Commission on
 Accreditation of Hospitals in 1951 (see timeline at the JCAH website:
 21 <https://www.jointcommission.org/-/media/tjc/documents/tjc-history-timeline-through-2022.pdf>
 and Kisacky, Rise of the Modern Hospital, 229-232, 260-264). Current overview of hospital
 22 standards and accreditation process are available at:
 23 <https://www.jointcommission.org/standards/about-our-standards>. The American Hospital
 Association also publishes standards and guidelines for hospital practice (“Standards/Guidelines,”
 24 <https://www.aha.org/taxonomy/term/134>; Nurse standards and certification influence hospital
 care (American Nurses Association, Nursing: Scope and Standards of Practice, 4th ed., 2021). The
 Academy of Architecture for Health, of the American Institute of Architects, through the Center
 25 for Health Design, provides evidence-based design accreditation and certification
 (<https://www.healthdesign.org/certification-outreach>).

26 ¹² Medical Conditions of Participation, 42 CFR Part 482,
 27 <https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-G/part-482?toc=1>

28 ¹³ California Department of State Hospitals, “Patient’s Rights,”
https://www.dsh.ca.gov/About_Us/Patients_Rights.html

1 over its 30-year period, a majority of which were built in smaller communities,
 2 underserved, and rural areas.¹⁴

3 11. In sum, in the United States today, hospitals are widespread, highly
 4 regulated, technologically advanced treatment centers that are considered to be the
 5 preferred location for the receipt of medical care.

6 **II. Hospitals As They Existed In The Founding Era (In And Around** 7 **The Year 1791)**

8 12. Only a handful of hospitals existed in the United States by the year
 9 1791; all of them were in the larger cities.¹⁵ They were not the preferred location of
 10 medical care. House calls, where the doctor treated patients in their own homes,
 11 were the standard of medical care, but were accessible only to persons with homes
 12 and with disposable income to afford the doctor's fees.¹⁶ Initially, the sick poor
 13 were either given "outdoor relief" (the delivery of direct money or services to the
 14 needy in their places of residence) or sent to an almshouse or poorhouse (to which
 15 the closest modern equivalent would be a homeless shelter).¹⁷ In the mid-1700s,
 16 interest in creating hospitals to separate the medically sick (who could potentially

17
 18 ¹⁴ Lave, J. R. and L. B. Lave (1974). *The Hospital Construction Act: An Evaluation of the Hill-Burton program, 1948-1973*. Washington, D.C., American Institute for Public Policy Research.

19 ¹⁵ Kisacky, *Rise of the Modern Hospital: An Architectural History of Health and Healing*, University of Pittsburgh Press, 2017. *Charity Hospital in New Orleans* was founded in 1721 (John Salvaggio, *New Orleans' Charity Hospital: A Story of Physicians, Politics, and Poverty*, Baton Rouge/London: Louisiana State University Press, 1992). *Pennsylvania Hospital in Philadelphia* was founded in 1751, opened in a temporary facility in 1752, and moved to its permanent location in 1756 (Thomas G. Morton and Frank Woodbury, *The History of the Pennsylvania Hospital; 1751-1895*, Philadelphia: Times Printing House, 1895)

20 <https://digirepo.nlm.nih.gov/ext/dw/68130800R/PDF/68130800R.pdf>. The New York Hospital in New York City was founded in 1771 but only opened and began admitting patients in 1791 (Eric Larrabee, *The Benevolent and Necessary Institution: The New York Hospital 1771-1971*, Garden City, NY: Doubleday and Company, 1971).

21 ¹⁶ Charles E. Rosenberg, *The Care of Strangers: The Rise of America's Hospital System*, New York: Basic Books, 1987; Oscar Reiss, *Medicine in Colonial America*, Lanham: University Press of America, 2000; Paul Starr, *Social Transformation of American Medicine*, New York: Basic Books, 1982).

22 ¹⁷ Gary Nash, "Poverty and Politics in Early American History," In *Down and Out in Early America*, (University Park, Pa.: Pennsylvania State University Press, 2004. See also *Britannica Online* s.v. "Almshouse"; <https://www.britannica.com/topic/almshouse>.

be cured and returned to productive lives) from the other inmates (described variously as vagrants, beggars, etc.) developed.¹⁸ City administrators also believed that these hospitals would offer a more efficient solution: Benjamin Franklin believed that hospital care would cost only one-tenth as much as private home care.¹⁹

13. There were no hospital design standards or guidelines in 1791. These earliest American hospitals occupied structures based on the sparse existing

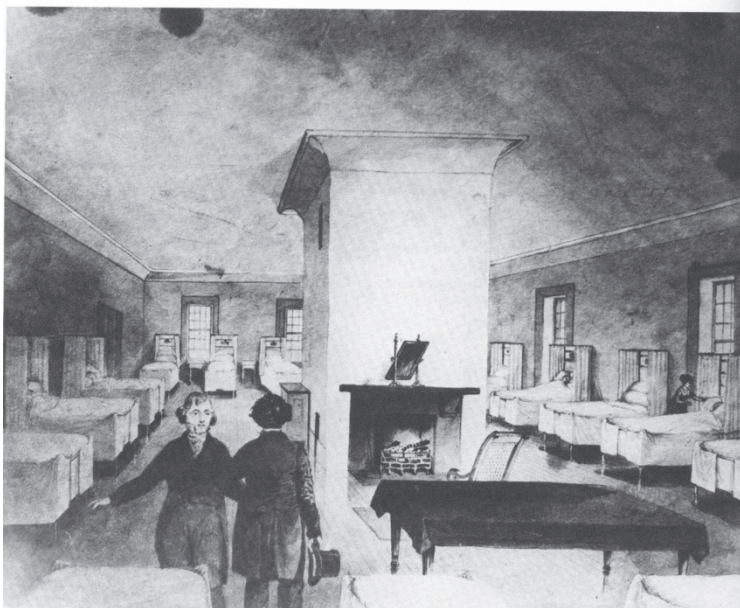


Figure 1: View of Ward in Massachusetts General Hospital in 1845. Showing the placement of beds in a large open room. The central fireplace was unusual. Figure from John D. Thompson and Grace Goldin, The Hospital: A Social and Architectural History, (New Haven, Conn.: Yale University Press, 1975).

descriptive literature on hospital design (mostly written by European doctors and reformers) and on the personal experience of European hospitals brought back by American doctors who had done medical training abroad.²⁰ At a time before germ theory, bad air was considered the cause of many diseases and to prevent airborne spread of disease between patients, the literature emphasized design features

¹⁸ David J. Rothman, The Discovery of the Asylum: Social Order and Disorder in the New Republic, (Boston: Little, Brown and Company, 1971).

¹⁹ Benjamin Franklin, Some Account of the Pennsylvania Hospital from its First Rise to the beginning of the fifth Month called May, 1754, (Philadelphia: B. Franklin and D. Hall, 1754) <https://digirepo.nlm.nih.gov/ext/mhl/2554043R/PDF/2554043R.pdf>, 21.

²⁰ See, e.g., John Aikin, Thoughts on Hospitals, ([London] 1771); Samuel Bard, A Discourse Upon the Duties of a Physician, with Some Sentiments, on the Usefulness and Necessity of a Public Hospital . . . (New York: A. & J. Robertson, 1769) <https://digirepo.nlm.nih.gov/ext/mhl/2542034R/PDF/2542034R.pdf>; and Dr. John Jones, Plain, Concise, Practical Remarks on the Treatment of Wounds and Fractures; To Which is Added, a Short Appendix on Camp and Military Hospitals . . . (New York: John Holt, 1775) <https://digirepo.nlm.nih.gov/ext/mhl/2559023R/PDF/2559023R.pdf>.

(narrow, well-windowed rooms and widely spaced beds) that provided voluminous fresh air between patients.²¹

14. Hospitals in the 1790s primarily consisted of “wards” – large open rooms which housed from 10 to 30 patients. [See Figures 1 and 2.] For the most cost-effective care, one head nurse and a couple assistants cared for all the patients within one ward; each ward had a handful of adjacent basic service spaces, such as bathrooms, stores, washrooms, kitchen, and a nurses’ room. Other than wards, hospital buildings typically held only an administrative office, an apothecary room (pharmacy), central kitchen, central laundry, and apartments for the staff (nurses, superintendent, matron, etc.) who were provided housing as part of their employment.²²

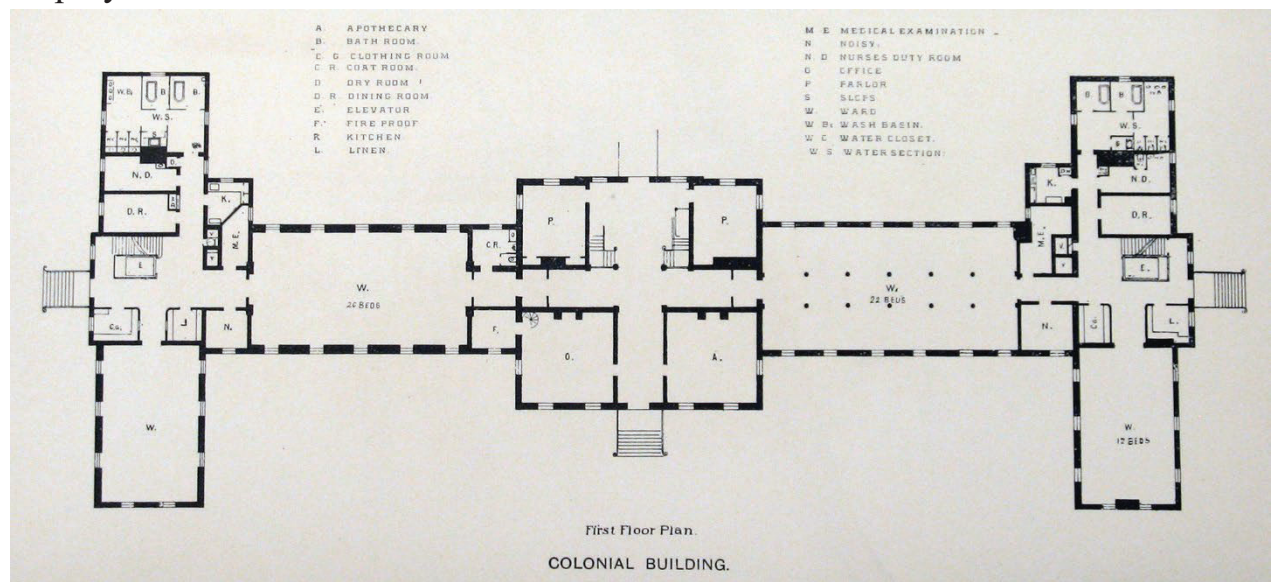


Figure 2: Floor Plan of Pennsylvania Hospital in 1896. In 1791, only the East Wing (the left third of this image) was completed. Figure from Pennsylvania Hospital, Annual Report, 1896, frontispiece.

²¹ The science of ventilation at the time was limited to the use of natural ventilation (winds through openings) or to temperature differentials (the updraft created by chimneys or fireplaces). See Jeanne Kisacky, “Restructuring Isolation,” Bulletin of the History of Medicine, 79:1 (2005) 1-49 DOI: 10.1353/bhm.2005.0029; Jeanne Kisacky, “Breathing Room: Calculating an Architecture of Air,” in Anthony Gerbino, Ed., Geometrical Objects: Architecture and the Mathematical Sciences 1400-1800, Switzerland: Springer, 2014.

²² I base these general observations about hospital design and practice on archival research in the collections of the New York Hospital, the Presbyterian Hospital, Mount Sinai Hospital, the National Library of Medicine, the University of Pennsylvania archives, and the New York Academy of Medicine, which included analysis of available hospital annual reports published between 1751 and 1945 for over 100 hospitals.

1 15. With their almshouse pedigree, persons of means rarely became
2 patients in hospitals; travelers caught ill away from home were the notable
3 exception. Admission to the hospital required personal application to a governor (a
4 prominent community member on the board of governors), a hospital surgeon, or a
5 hospital physician.²³ For both the Pennsylvania Hospital and the New York
6 Hospital, applicants who resided in the State but not in the City, had to be
7 recommended to the hospital “by a justice of the peace and an overseer or overseers
8 of the poor in the township wherein they reside.”²⁴ If the applicant was deemed a
9 worthy case, the governor would give the applicant a note of recommendation that
10 could be presented to the visiting committee at the hospital. The applicant would
11 then be examined by hospital doctors to determine if their condition were treatable.
12 Persons in need of immediate emergency treatment could be admitted immediately,
13 and the interview and determination of eligibility would follow later.²⁵

14 16. At the Pennsylvania Hospital, it was expected that if a patient could
15 pay for some or all of their stay, they would do so, and that the income would be
16 used to offset the charitable care provided to other patients.²⁶ Pay patients could
17 choose (and pay for) a specific doctor; charitable patients received care from one of
18 the appointed institutional doctors.²⁷ The bulk of the care was provided by house
19 doctors, young practitioners starting out on their careers who lived in the hospital.
20

21 ²³ The admission process is outlined in multiple locations as each party’s responsibilities
22 (governor, doctor, patient) was spelled out separately (Society of the New York Hospital, A Brief
23 Account of the New York Hospital, [New York City: Isaac Collins & Sons, 1804),
24 <https://digirepo.nlm.nih.gov/ext/mhl/2572040R/PDF/2572040R.pdf>, pp. 21-22, 27-28, 34, 36).
The Pennsylvania Hospital had similar admission procedures (Some Account of the Pennsylvania
Hospital . . . , 1754, op. cit. 26).

25 ²⁴ A Brief Account of the New York Hospital, 1804, op.cit. p. 34; Some Account of the
Pennsylvania Hospital . . . , 1754, op. cit. 225-6.

26 ²⁵ Some Account of the Pennsylvania Hospital op. cit., 26, 1754, op. cit.; A Brief Account
of the New York Hospital, 1804, op.cit. pp. 21-22

27 ²⁶ Some Account of the Pennsylvania Hospital . . . , 1754, op.cit. 26; A Brief Account of
the New York Hospital, 1804, op.cit. p. 32-34

28 ²⁷ Some Account of the Pennsylvania Hospital, 26-27.

1 The attending physicians volunteered their service and visited the hospital a couple
2 times a week, and on a rotating monthly schedule.²⁸

3 17. There were no separate rooms for paying patients. Patients were
4 assigned to a ward based on gender (whether they were male or female) and
5 whether they were a medical or surgical patient. Pregnant women in the New York
6 Hospital were assigned to a specific lying-in ward.²⁹ Mentally ill patients who
7 could be disruptive of ward order were often placed apart, in a basement or remote
8 ward.³⁰ Beyond those distinctions, patients were assigned randomly to available
9 beds in one of the large wards. Once admitted, patients stayed in the same bed in
10 the same ward for the duration of their stay, which was typically measured in weeks
11 or even months.³¹

12 18. Patients surrendered bodily autonomy with their admission. The Rules
13 for patients of both the Pennsylvania Hospital and the New York Hospital make this
14 explicit. At the New York Hospital, “any patient misbehaving by going out without
15 leave, getting drunk, swearing, or be [sic] guilty of other disorderly conduct,” could
16 be confined or discharged regardless of condition.³² Smoking or playing at cards,
17 dice or other games of chance, or begging were also grounds for discharge.³³
18 According to historian Charles E. Rosenberg, misbehaving patients could be

19 ²⁸ A Brief Account of the New York Hospital, op. cit., 1804, 28-31. Rosenberg, Care of
20 Strangers, op. cit. 15-46. By 1837, Bellevue Hospital noted that each attending doctor had the
21 care of an average of 400 patients (Report of the Special Committee upon the Memorial,
22 Remonstrance, &c., of Sundry Physicians, Relative to a new Organization of the Hospital
23 Department of the Alms House. Document No. 108 New York City Board of Assistant Alderman
24 [New York City: T. Snowden, 1837]).

25 ²⁹ Society of the New York Hospital, An Account of the New-York Hospital, (New York:
26 Collins & Co., 1811), <https://digirepo.nlm.nih.gov/ext/mhl/2572041R/PDF/2572041R.pdf>, 6.

27 ³⁰ At the Pennsylvania Hospital, the directors added cells in the basement for the mentally
28 ill (Morton and Woodbury, The History of the Pennsylvania Hospital; 1751-1895, op. cit., 128-
129).

³¹ In 1844, the directors of the Massachusetts General Hospital pointed out that private
patients stayed in the hospital an average of 3 weeks and 6 days, while charity (free) patients
stayed an average of 7 weeks and 1 day (Massachusetts General Hospital, Annual Report 1844, p.
4).

³² A Brief Account of the New York Hospital, 1804, op. cit. p. 26-27. Similar rules were
also in Some Account of the Pennsylvania Hospital, pp. 25-27.

³³ A Brief Account of the New York Hospital, 1804, op. cit. p. 35.

1 punished, whether by being prescribed a ‘low diet,’ transferred to a less desirable
2 ward, or even given cold showers. “In most hospitals, authorities withheld the
3 patients’ clothes so as to control their comings and goings.”³⁴ The Pennsylvania
4 Hospital’s ward design included “clothing rooms” for safekeeping but this also
5 enabled control of a patient’s street clothes and personal effects. [See Figure 2.]

6 19. Patients were not allowed to enter the kitchen or any of the servants’
7 apartments; this in effect confined them to the ward.³⁵ To leave the hospital grounds
8 even for a short time, house staff, nurses, and domestic servants as well as patients



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17 Figure 3: View of Pennsylvania Hospital in 1799
18 by Wm. Birch showing the hospital wall.
19 <https://www.loc.gov/item/2002718889/>

had to request a “pass.”³⁶ Hospitals
had walls around them, with a
gatehouse and gate keeper to control
who could enter and leave. [See
Figure 3.] By the early 1800s, the
governors of the New York Hospital
added bars to the windows of one of
the ward buildings to reduce unofficial
comings and goings. Visitors to
patients (such as family and friends)
were strictly regulated. At the

20 Pennsylvania Hospital visiting hours were limited to the one hour between noon
21 and one o’clock on every day but Sunday.³⁷ The physician at the New York
22 Hospital could prohibit visitors entirely to asylum (mentally ill) patients.³⁸ As they
23 recovered, patients were expected to assist in menial chores—typically sweeping,
24
25

26 ³⁴ Rosenberg, *Care of Strangers*, op. cit. 36.

27 ³⁵ *A Brief Account of the New York Hospital*, 1804, op. cit. p. 35.

28 ³⁶ Rosenberg, *Care of Strangers*, op. cit., p. 35

³⁷ Rosenberg, *Care of Strangers*, op. cit., p. 35

³⁸ *An Account of the New-York Hospital*, New York: Collins & Co., 1811, p. 52.

1 simple washing, or helping feed the bedridden.³⁹ At the New York Hospital, once a
2 week one of the patients was required to read the Bible to the other patients.⁴⁰

3 20. Nurses were untrained and poorly paid, and nursing was difficult,
4 onerous, and dangerous work. Many were recovered former patients or persons
5 with prior experience in housekeeping positions.⁴¹ The rules created for Nurses
6 indicate some of the problems experienced. At the New York Hospital the
7 superintendent had license to “discharge such of them as may be guilty of swearing,
8 drunkenness, or other bad conduct, or of clandestinely bringing spirituous liquors
9 into the house for the use of themselves or the patients.”⁴² Typically the nurses
10 worked in two shifts with multiple day nurses but only one night nurse or even a
11 hired untrained ‘watcher’ for a ward, or perhaps multiple wards.⁴³

12 21. The ward was a public space: the patients were in it all day and night,
13 coughing, talking, and (before painkillers) groaning or even screaming. Hospital
14 managers, the superintendent, matron, doctors, house doctors, medical students and
15 staff visited the ward regularly, at their convenience, at all times of day. Without
16 separate examination or treatment rooms, the house doctors and attending doctors
17 provided whatever care was needed (even surgery) within the ward space itself.⁴⁴
18 There was no privacy; each patient could see and hear the examination and
19 treatment of the surrounding patients. [See Figure 1.] Medical treatments of the age
20 still followed the ancients (Hippocrates and Galen) and included bloodletting,
21 purges, emetics, and restoratives (such as alcohol) as well as practical care such as
22 restorative diets and rest.⁴⁵

23
24 ³⁹ A Brief Account of the New York Hospital, 1804, op. cit., p. 35.

25 ⁴⁰ A Brief Account of the New York Hospital, 1804, op. cit., 32-33.

26 ⁴¹ Rosenberg, Care of Strangers, op. cit., 38-39

27 ⁴² A Brief Account of the New York Hospital, 1804, op. cit., p. 32.

28 ⁴³ Rosenberg, Care of Strangers, op. cit., 38-39.

⁴⁴ Rosenberg, Care of Strangers, op. cit., 15-46.

⁴⁵ John Parascandola, “Drug Therapy in Colonial and Revolutionary America,” Am J Hosp Pharm. 33:8 (Aug 1976) 807-810. PMID 782235.

1 22. There were no operating rooms in hospitals in 1791; most surgical
2 treatments were performed in the ward, without anesthesia (which would not be
3 discovered until 1846); antiseptics (which would not be discovered until 1868); and
4 penicillin (which would not be discovered until 1928 and only put into broad use in
5 the 1940s).⁴⁶ Treatments and care for existing wounds (such as bonesetting and
6 wound care) were regularly performed, but surgery as an intervention was
7 infrequent and a last resort. The event was traumatic not only for the patient, but for
8 the others in the room who had to hear and experience the event.⁴⁷

9 23. Hospitals were also dangerously subject to cross-infections within the
10 wards. In the surgical wards, post-surgical septic infections affected a majority of
11 patients; in 1776, Dr. John Jones described ‘laudable’ pus as a normal step in
12 wound healing.⁴⁸ Statistics listed in hospital annual reports of the 1790s and 1800s
13 regularly counted a 10-15% patient mortality rate for all patients. According to Dr.
14 Jones, during times of internal outbreaks, 20-40% of patients in the hospital might
15 die from diseases they caught after admission, and amputations were so deadly (40-
16 60% of amputees died) that doctors often chose not to perform them.⁴⁹ In the
17 medical wards, though hospitals barred admission to any patient with an infectious
18 ailment, many entered with latent illness and internal epidemics of typhus,
19 erysipelas, and other infections occurred regularly.⁵⁰

20 ⁴⁶ Kisacky, “Restructuring Isolation,” op. cit.; Kisacky, “Consequences of Migrating U.S.
21 Contagious Facilities Into General Hospitals, 1900-1950,” *Health Environments Research &
22 Design Journal*, 15:1 (Jan 2022) 75-96; Owen H. Wangensteen and Sarah D. Wangensteen, The
23 Rise of Surgery: From Empire Craft to Scientific Discipline (Minneapolis, Minn.: University of
24 Minnesota Press, 1978).

25 ⁴⁷ Atul Gawande, “Two Hundred Years of Surgery,” *New England Journal of Medicine*,
26 366:18 (2012) 1716-1723. DOI 10.1056/NEJMr1202392.

27 ⁴⁸ Jones, Plain, Concise, Practical Remarks, op. cit., 5.

28 ⁴⁹ Jones, Plain, Concise, Practical Remarks, op. cit., 5; Owen H. Wangensteen, Sarah D.
Wangensteen, Charles F. Klinger, “Surgical cleanliness, hospital salubrity, and surgical statistics,
historically considered.” *Surgery* 71:4 April 1972 477-493; J. W. Alexander, “The contributions
of infection control to a century of surgical progress,” *Annals of Surgery* 201:4 (April 1985) 423-
428, doi: 10.1097/00000658-198504000-00004.

⁵⁰ Graham A. J. Ayliffe, Hospital Infection: From Miasmas to MRSA, Cambridge/New
York: Cambridge University Press, 2003; George Hayward, “History of the Erysipelatous
Inflammation that Recently Appeared in the Massachusetts General Hospital,” New England

III. Hospitals As They Existed In The Reconstruction Era (In And Around The Year 1868)

24. For the first half of the nineteenth century, hospitals remained few in number (particularly compared to overall population growth) in the United States.⁵¹ During this period of intense immigration and urbanization, the hospitals that were in operation were often overcrowded.⁵² It was a simple thing to put more beds into a large open ward, but the crowding increased the problems of internal disease spread and of social control of the wards by overburdened nurses. The wards could become uncontrolled, unsavory, and dangerous locations. Sensational newspaper articles about Bellevue Hospital in New York City in 1860 detailed the horrors of rats in the wards.⁵³ The patient statistics in the civil hospitals clearly indicated a majority of hospital patients were recent immigrants who had no other options for medical care.⁵⁴

25. Between 1859 and 1863, the writings and experiences of Florence Nightingale initiated professional nursing and provided basic guidelines for hospital construction and hygiene.⁵⁵ These were rapidly adopted worldwide; in the United

Medical Review and Journal 16:3 (1 Jul 1827) 284-294. “McCready, “Address,” in Alms House, New York City, Annual Report 8 [1856] 14-15; Kisacky, “Restructing Isolation,” op.cit.

⁵¹ US Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970 (Washington, D.C.: Department of Commerce, 1975), https://www2.census.gov/library/publications/1975/compendia/hist_stats_colonial-1970/hist_stats_colonial-1970p1-chB.pdf, 78.

⁵² For example, “A Crowded Hospital,” New York Times, Saturday July 15, 1854, p. 4 stated the City hospital had 50 more patients in the female wing than beds to give them. See also Rosenberg, The Care of Strangers, op. cit., pp. 97-114.

⁵³ “Rats at Bellevue Hospital” New York Times, April 27, 1860, Page 8.

⁵⁴ This observation is based on research encompassing dozens of hospital annual reports in this era, which typically cited patient statistics including nationality, ethnicity, gender, etc.

⁵⁵ Florence Nightingale, Notes on Nursing: What it Is and What it Is Not, New York: D. Appleton and Company, 1860, <https://digirepo.nlm.nih.gov/ext/dw/68161120R/PDF/68161120R.pdf>; and Nightingale, Notes on Hospitals, London: Longman, Green, Longman, Roberts, and Green, 1863, <https://babel.hathitrust.org/cgi/pt?id=hvd.32044019953553&seq=6> .

States during the Civil War, both the Union and the Confederacy based their military hospital designs and programs on Nightingale's writings.⁵⁶

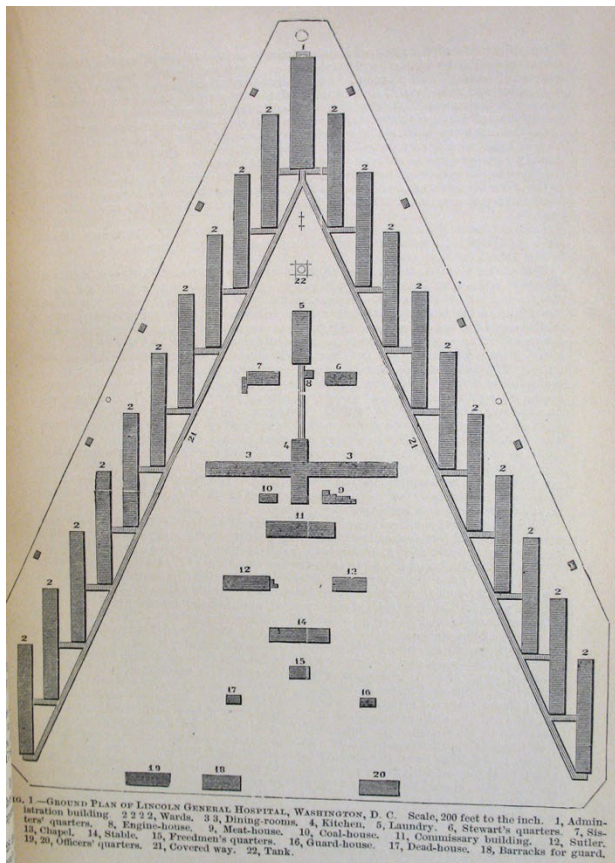


Figure 4: Lincoln General Hospital, Washington D.C. (a Civil War military hospital) circa early 1860s. All buildings in the outer echelon were ward buildings, the buildings on the central axis provided service and administration. From George F. Hammond, A Treatise on Hospital and Asylum Construction, Cleveland [published for author] 1891.

26. Nightingale placed significant emphasis on cleanliness, sunlight, and fresh air, which she considered more curative than medical intervention. Nightingale advocated a hospital layout called the “pavilion plan,” which was designed to maximize fresh air and minimize the transfer of air between patients as a means of reducing the spread of airborne disease.⁵⁷ [See Figure 4]. A number of small independent pavilions (holding one large ward and all the necessary patient services) were arranged on large natural landscaped sites. The wards were much the same as those in 1791, with anywhere from 20 to 30 patients per ward overseen by one head and several assistant nurses.

⁵⁶ Frank R. Freeman, Gangrene and Glory: Medical Care During the American Civil War, Madkson, N.J.: Fairleigh Dickinson University Press, 1998; Robert S. Lanier, The Photographic History of The Civil War in Ten Volumes, New York: The Review of Reviews Co, 1911.

⁵⁷ Nightingale, Notes on Hospitals, London: Longman, Green, Longman, Roberts, and Green, 1863.

27. Nightingale indicated that pavilion plans would make hospitals safe-- the extensive ventilation would prevent airborne disease spread, while the professional nurses would make the ward a controlled, clean, moral environment and provide basic care.⁵⁸ This enabled the growth of hospitals and by the 1870s, cities across the country began to add more hospitals built along Nightingale's guidelines.⁵⁹

28. Nightingale's reformatory efforts, however, were a refinement of the existing charitable institution, not a transformation of the hospital to a location of specialized medical care for all citizens. Hospitals of the 1860s were essentially sanitized, more orderly versions of the hospitals of the 1790s. They held mostly large (10-to-30 bed) wards, with the necessary ward services (including kitchen, laundry, and administration). As locations for moral as well as physical care, many hospitals included chapels. St. Luke's Hospital in New York City included 200 beds but no operating rooms. At its center was a chapel that accommodated 350 persons, and the building was arranged so that all patients could hear the services from their beds. [See Figure 5.]

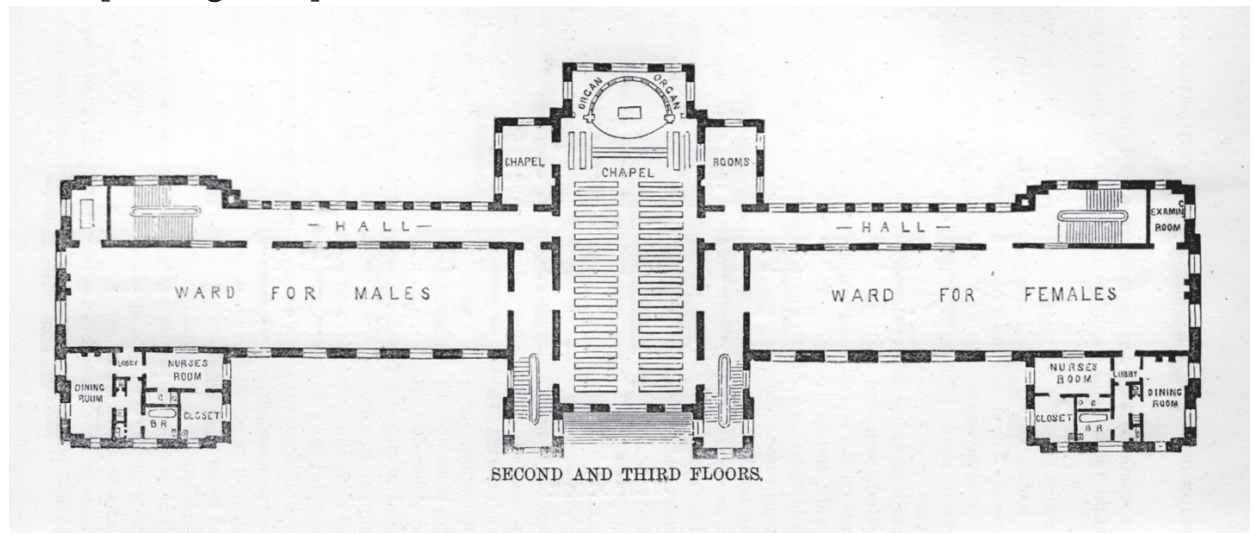


Figure 5: St. Luke's Hospital in New York City, floor plans, ca. 1860. From St. Luke's Hospital, Annual Report 1860.

⁵⁸ Charles E. Rosenberg, "Florence Nightingale on Contagion: The Hospital as Moral Universe," in Healing and History: Essays for George Rosen, ed. Rosenberg (New York: Science History Publications, 1979), 118.

⁵⁹ Kisacky, Rise of the Modern Hospital, *op. cit.*, 22-77.

29. While hospitals still did not include extensive specialized surgical or medical treatment facilities, many did include a surgical amphitheater or a rudimentary pathological laboratory to increase the value of medical education in the hospital. While the development of anesthesia in 1846 increased the value of a separate room for administration of and recovery from anesthesia, it also allowed doctors to perform longer, more complex surgeries without any concomitant improvement in strategies to prevent or treat infections. The survival rate of surgical patients in hospitals was abysmal.⁶⁰ A high percentage of patients survived the operation, but soon died of post-operative complications, such as what we would now know as shock or simple decline, but most often of septic infections.⁶¹ In 1872, after spending time as a house surgeon at Bellevue Hospital, Dr. Thomas K. Cruse called it a “slaughter pen of the wounded,” and noted that even the long-time doctors could not remember a patient recovering from a thigh amputation in the hospital.⁶² Lister’s series of articles on germ theory and the success of antiseptic surgery appeared in 1867, but were initially received by US doctors with as much skepticism as acceptance.⁶³ The transformations of germ theory, of antiseptic surgery, and eventually aseptic surgical practices, occurred in the late 1870s and afterwards.

⁶⁰ Bellevue Hospital listed mortality rates for amputation cases at 48 percent in 1872 and 1837 and for lying-in (obstetric) patients at 40 percent in May of 1874 (State Charities Aid Association, Visiting Committee, Bellevue Hospital, New York City, Annual Report 3 [1875] 10; Edward D. Churchill, “The Pandemic of Wound Infection in Hospitals: Studies in the History of Wound Healing,” Journal of the History of Medicine, 20 (Oct 1965), 391-404, <https://www.jstor.org/stable/24621509>; Kisacky, Rise of the Modern Hospital, *op. cit.*, pp. 78-104.

⁶¹ “Bellevue Hospital,” New York Times 18 June 1873.

⁶² Thos. K Cruse, “The Treatment of Compound Fractures of the Leg, at Bellevue Hospital,” Medical Record 7 (15 April 1872), pp. 140.

⁶³ Lister, “On the Antiseptic Principle in the Practice of Surgery,” British Medical Journal 2:351 (Sept 21 1867) 246-248, <https://www.bmj.com/content/2/351/246>; Thomas P. Gariepy, “The Introduction and Acceptance of Listerian Antisepsis in the United States,” Journal of the History of Medicine and Allied Sciences 49:2 (April 1994) 167-206., DOI: 10.1093/jhmas/49.2.167.

Exhibit 1

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EDUCATION

2000	Ph.D.	Cornell University, Ithaca, New York, History of Architecture and Urban Design
1995	M.A.	Cornell University, Ithaca, New York, History of Architecture and Urban Design
1990	M.Arch.	Princeton University, Princeton, New Jersey
1988	B.A.	Washington University, St. Louis, Missouri, magna cum laude

GRANTS

1/2009-9/2011	Grant G13LM 009479, National Library of Medicine/National Institute of Health, Grant for Scholarly Works in Biomedicine and Health, Individual Award for preparation of book manuscript: <u>From Pavilions to Hospitals: A History of Healthy Hospital Design.</u>
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PROFESSIONAL EXPERIENCE

GRANT MANAGEMENT/ADMINISTRATIVE

2022-present	<u>Grant and Contract Officer.</u> Cornell University. Pre- and post-award non-financial research administration.
2020-2022	<u>Communications Assistant</u> and <u>Temp Administrative Assistant</u> , Cornell University.
2014-2020	<u>Administrative Assistant</u> to Prof. <u>Susan McCouch</u> , Cornell University. Assist Prof. McCouch in managing approximately \$18M of research grants.

TEACHING/ACADEMIC

Oct-Dec 2012	<u>Instructor</u> , Syracuse University. Department of Architecture. I finished teaching two already-in-progress courses for an instructor who was placed on emergency medical leave.
Spring 2012	<u>Instructor</u> , Syracuse University. Department of Architecture.
Summer 2009	<u>Participating Historian</u> , "Ellis Island 1891-1924: Immigration, Public Health and the American Workforce," NEH Landmarks in American History and Culture Workshop for Teachers at the Ellis Island Institute.
Fall 2008	<u>Visiting Lecturer</u> , Cornell University. Department of City and Regional Planning.
Summer 2008	<u>Participating Historian</u> , "Ellis Island 1891-1924: Immigration, Public Health and the American Workforce." As described above.
Fall 2007	<u>Adjunct Professor</u> . Syracuse University. Department of Architecture.
2005-2006	<u>Assistant Professor</u> . Syracuse University. Department of Architecture.
Spring 2005	<u>Lecturer</u> . Syracuse University. Department of Architecture.
Spring 2005	<u>Adjunct Assistant Professor</u> , Binghamton University, Dept. of Art History,
2003-2004	<u>Lecturer</u> . Syracuse University. Department of Architecture

Fall 2002	<u>Visiting Lecturer</u> , Cornell University. Department of Architecture;
2001-2004	<u>Visiting Scholar</u> . Cornell University. Department of Science and Technology Studies.
1994-1996	<u>Teaching Assistant</u> , Cornell University, Architecture Department
Fall 1989	<u>Assistant in Instruction</u> , Princeton University, Architecture Department

PUBLISHING

1999-2001	<u>Managing Editor</u> of <u>Isis</u> , the Journal of the History of Science Society, (then affiliated with the Dept. of Science and Technology Studies, Cornell University).
Fall 1997, 1998-1999	<u>Book Review Assistant</u> , or <u>Manuscript Assistant</u> for <u>Isis</u> .

ARCHITECTURAL DESIGN/PRACTICE

1990-1993	<u>Architectural Intern</u> , Ford, Farewell, Mills, and Gatsch, Architects (formerly Short and Ford and Partners, Architects) Princeton, New Jersey
Summer 1989	<u>Architectural Intern</u> , Kohn Pederson Fox Architects, New York, NY
1987-1988	<u>Architectural Assistant</u> to Vice President of Facilities Management, Children's Hospital, St. Louis, Missouri, under Roger E. Becker, AIA.

PUBLICATIONS

Books

Jeanne Kisacky, *The Rise of the Modern Hospital: An Architectural History of Health and Healing* (Pittsburgh: University of Pittsburgh Press, 2017).

Recipient of the 2017 Fred B. Kniffen Book Award for best authored publication from the International Society of Landscape, Place, and Material Culture.

Articles

D. Kirk Hamilton, Jeanne Kisacky, Frank Zilm; "Critical Care 1950 to 2022: Evolution of Medicine, Nursing, Technology, and Design," *Critical Care Clinics*, July 2023 39 (3): 603-625. DOI: 10.1016/j.ccc.2023.01.002

Jeanne Kisacky, "Consequences of Migrating US Contagious Facilities into General Hospitals, 1900-1950," *HERD-Health Environments Research & Design Journal*, Jan 2022 15:(1) 75-96. DOI: 10.1177/19375867211049818

Jeanne Kisacky "An Architectural History of US Community Hospitals," *AMA J Ethics* 21:3 (March 2019) E288-296. doi: 10.1001/amajethics.2019.288.

Jeanne Kisacky "When Fresh Air Went Out of Fashion at Hospitals," Smithsonian.com, Jun 14, 2017, <http://www.smithsonianmag.com/history/when-fresh-air-went-out-fashion-hospitals-180963710/>

Jeanne Kisacky "How Hospital Rooms Went from Airy Temples to "Inhuman" Machines: Architecture Used to Pamper Patients. Then Designers Began Prizing Efficiency," June 7, 2017 on <http://www.zocalopublicsquare.org/2017/06/07/hospital-rooms-went-airy-temples-inhuman->

[machines/ideas/nexus/](#)

Jeanne Kisacky "Illuminations of Theme: How Critique can Teach Us What Our Work Is Trying to Say," in *Author in Progress: A No-Holds Barred Guide to What it Really Takes to Get Published*, (New York: Writer's Digest Books, 2016)

Jeanne Kisacky "Breathing Room: Calculating an Architecture of Air." In *Geometrical Objects: Architecture and the Mathematical Sciences 1400-1800*, edited by Anthony Gerbino. (Archimedes 38, New Studies in the History and Philosophy of Science and Technology) Switzerland: Springer, 2014.

Jeanne Kisacky "Germs are in the Details: Aseptic Design and General Contractors at the Lying-In Hospital of the City of New York, 1897-1901," *Construction History*, 28:1 (2013) 83-106.

Jeanne Kisacky "The Color of Surgery," in Marilyn Delong and Barbara Martinson, eds., *Color in Design*, London/New York: Berg, 2012

Jeanne Kisacky "Restructuring Isolation: Hospital Architecture, Medicine, and Disease Prevention" *Bulletin of the History of Medicine*, 79:1 (Spring 2005), 1-49.

Jeanne Kisacky "History and Science: Julien-David Leroy's Dualistic Method of Architectural History," *Journal of the Society of Architectural Historians*, 60: 3 (Sept 2001), 260-289.

Book Reviews:

Annmarie Adams, *Medicine by Design: The Architect and the Modern Hospital, 1893-1943*. (Minneapolis/London: University of Minnesota Press, 2008). *Winterthur Portfolio*, 44: 2/3, (Summer/Autumn 2010), 248-250.

Carla Yanni, *The Architecture of Madness: Insane Asylums in the United States*. (Minneapolis/London: University of Minnesota Press, 2007) reviewed in *The Journal of the History of Medicine and Allied Sciences*, 65: 1 (Jan. 2010), 135-137.

Carla Yanni, *The Architecture of Madness: Insane Asylums in the United States*. (Minneapolis/London: University of Minnesota Press, 2007) reviewed in *The Register of the Kentucky Historical Society*, 105:4 (Autumn 2007)

ACADEMIC PRESENTATIONS

June 2023 "Design of Critical Care Facilities," Recorded collaborative presentation (with Frank Zilm and D. Kirk Hamilton) presented at CHCC (China Hospital Construction Conference), Western China International Expo City, Chengdu, June 17-19,2023.

December 2021 "Critical Care Design: The History and Future," collaborative webinar presentation (with Frank Zilm, D. Kirk Hamilton, and Julie Fairman), AIA

	Webinar presented through the Academy of Architecture for Health, December 14, 2021.
August 2021	“What Nineteenth Century Hospital Designers Knew about Minimizing Airborne Transmission and Why It’s Been Forgotten,” Cecil Striker Society for the History of Medicine Webinar Lecture, University of Cincinnati (by zoom), August 26, 2021.
April 2022	“Open and Shut: A Brief History of the Changing Expectations of the Hospital Window,” Centro Interuniversitário de História das Ciências e da Tecnologia (CIUHCT), Lisbon, Portugal, web conference, April 22, 2022.
March 2020	“Open and Shut: A Brief History of Hospital Windows and Shifting Perceptions of Institutional Efficiency,” George Washington Corner Society Lecture, Rochester Academy of Medicine, NY, March 11, 2020.
January 2020	Commentary at “Feeling Dis/Ease—New Perspectives on Contemporary History, Max Planck Institute for Human Development, Berlin, January 29-31, 2020.
April 2019	“The Changing Design of the Minimum Effective Hospital (And Its Consequence) 1900-1950,” American Association of Historians of Medicine, Columbus April 25-28, 2019.
May 2017	Poster Presentation “The Long History of Evidence-Based Design,” American Association of Historians of Medicine, Nashville, May 4-7, 2017.
May 2013	"How Group Practice Influenced Early Twentieth-Century American Hospital Design," American Association of Historians of Medicine, Atlanta, May 16-19, 2013
March 2007	"Breathing Room." Paper read at 'Geometrical Objects,' Oxford University, March 18-20, 2007. Oxford.
April 2005	“Breathing Room: Measuring the Immaterial Requirements of Architecture” Society of Architectural Historians, Vancouver, B.C., Canada
28 Oct 2004	“From Chasing Air to Corraling Germs: Architectural Strategies of Disease Prevention in the New York Hospital to the 1930s” Invited Lecturer, Heberden Society, New York Hospital, New York, NY
June 2003	Poster Presentation “How to Get Light and Air” International Network of Hospital Historians, Montreal, QC, Canada
April 2003	“The Body as Source of Utilitarian Dimensions or as Source of Putrid Effluvia: Changing Expectations of Hospital Ward Design.” Society of Architectural Historians, Denver, CO
April 2002	“Making the Hospital Urban: Choosing a Site for the New York Hospital, 1850-1932” Society of Architectural Historians, Richmond, VA
Sept 2001	“Walls of Light and Air: Ventilation, Health, and Nineteenth-Century Hospital Architecture” Invited Lecturer, Dept. of Science, Technology, and Society, Pennsylvania State University, State College, PA

April 2001	“Redefining Isolation: Hospital Diseases, Hospital Architecture, and the New York Hospital” American Association for the History of Medicine, Charleston, SC
Nov. 2000	“Redefining Function: From Hygienic to Efficient Hospital Form” Department of Science and Technology Studies, SSRG Graduate Research Group; Cornell University, Ithaca, NY
April 1998	“Apportioning the Hospital: Changing Categorization in Nineteenth-Century Hospital Design” American Association for the History of Medicine, Toronto, ON, Canada
April 1996	“The Architecture of Medicine: Hospitals in Nineteenth-Century Philadelphia” Society of Architectural Historians, St. Louis MO

FELLOWSHIPS/AWARDS

1998-1999	Robert D. Macdougall Memorial Fellowship, Cornell University
1996-1997	Graduate Fellowship, Cornell University
1993-1994	Sage Graduate Fellowship, Cornell University
1990-1992	Graduate Fellowship, Princeton University
1984-1988	Chancellor's Scholarship, Washington University
1984-1988	Quaker State Scholarship
1984	High School Valedictorian